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Case Report

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Intestinal obstruction delaying the diagnosis of acute appendicitis: a case presentation

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ABSTRACT

Acute appendicitis is the most common surgical emergency worldwide. Patients often present with symptoms such as abdominal pain, migrating pain, loss of appetite, nausea, and vomiting. Signs of intestinal obstruction are rarely detected in patients. A 55-year-old male patient presented to the emergency department with complaints of abdominal distension, nausea, and vomiting, leading to admission to the surgical clinic with a diagnosis of intestinal obstruction. Due to the predominance of obstruction symptoms in the patient and the inadequacy of radiological evaluations due to the dilatation of bowel loops, emergency surgery was not performed. Following monitoring in the ward, laparotomy was performed in the patient, revealing a complete obstruction at 90 cm from the ileocecal valve, and a diagnosis of acute appendicitis was established. Appendectomy was performed, and the patient was discharged in a healed condition. Acute appendicitis can rarely lead to intestinal obstruction and may present with unexpected clinical manifestations.

Keywords: Acute appendicitis, intestinal obstruction, small bowel

INTRODUCTION

Mechanical obstructions are the most common surgical pathologies affecting the small intestine. Intestinal obstruction is defined as the partial or complete blockage of the passage of contents from proximal to distal.[1] Although adhesions resulting from prior surgeries are the most common cause, malignancies, volvulus, and Crohn's disease occasionally contribute to the etiology. When obstructions become complicated with strangulation, mortality can reach up to 30%.[2]

Acute appendicitis is most frequently characterized by abdominal pain, loss of appetite, nausea, and vomiting, making it the leading cause of emergency room visits. Among etiologies causing abdominal pain, acute appendicitis is the most common reason for acute abdomen.[3] Delayed cases may present with complications such as perforation, peritonitis, or obstruction. Adhesions developed secondary to inflammation or complication-related perforation of the appendix can lead to obstruction, given the appendix's mobile nature, allowing obstructions and adhesions to develop in a different area than the primary site.

Our presented case report delineates the surgical intervention and subsequent monitoring of a 55-year-old patient within our clinic. The primary objective was to articulate the potential of acute appendicitis to induce an ileus scenario even in the absence of perforation. We aimed to underscore the necessity of contemplating acute appendicitis in conjunction with adhesions, arising from previous surgeries, to foster a comprehensive clinical understanding.

CASE

A 55-year-old patient with no known medical history presents to the emergency department with isolated abdominal pain. The patient, for whom surgical consultation was not sought, is discharged from the emergency department after symptomatic treatment. On the 4th day of symptoms, the patient returns to the emergency department with the development of nausea and vomiting, prompting a general surgery consultation.

The patient was evaluated in the emergency department. On physical examination, the abdomen is soft, with no signs of rebound tenderness or defense, and minimal distension is present. A previous open cholecystectomy procedure has left a right subcostal incision. Complete blood count reveals no leukocytosis, with a white blood cell count of 4.8x103/mm^3, and other parameters are within normal limits. The patient is afebrile, and vital signs are stable. Nausea, which started 2 hours after eating, is reported.

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Direct abdominal X-ray shows the presence of air-fluid levels (**Figure 1**). No irreducible hernia is detected. The contrast-enhanced abdominal tomography is interpreted as "no evidence in favor of acute appendicitis; prominent dilatation of bowel loops and air-fluid levels consistent with ileus".

Considering the possibility of obstruction due to adhesions, the patient was admitted to the surgical ward and monitored with oral closed nasogastric decompression. At the 36th hour of admission, an increase in distension and the detection of acute abdominal signs led to the decision to perform emergency laparotomy (**Figure 2**).

Extensive dilation of the small intestines was observed, with adhesions accompanied by an inflamed appendix causing complete obstruction at 90 cm from the ileocecal valve (**Figure 4**). The adherent area was dissected, and an appendectomy was performed (**Figure 3**). The area causing the obstruction and other bowel loops appeared normal.

The patient's oral intake was closely monitored in the postoperative surgical service. The nasogastric drainage tube was removed on postoperative day 24, and oral intake was initiated. The patient, who tolerated oral intake, was discharged on the second postoperative day with nutritional recommendations.

Figure 1. First hospitalization x-ray

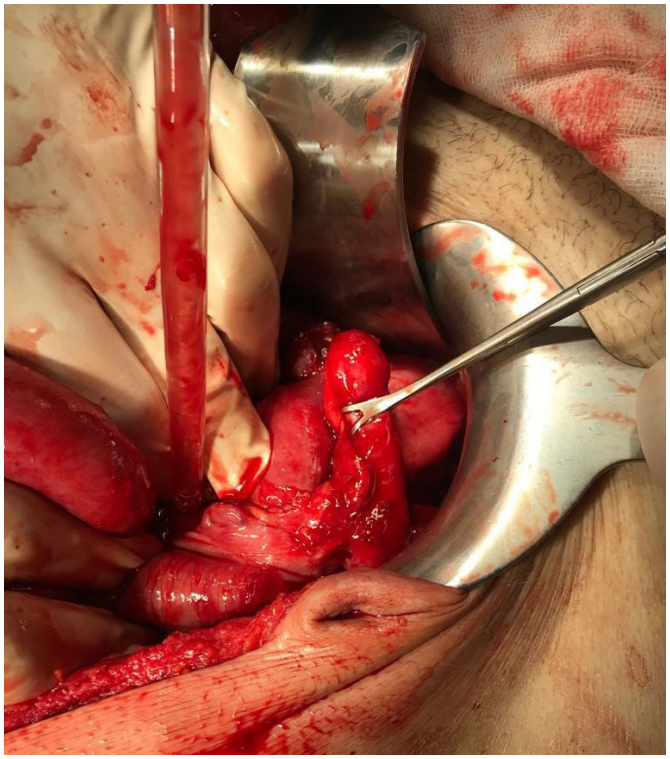

Figure 3. Inflamed appendix

Figure 2. Pre-op x-ray

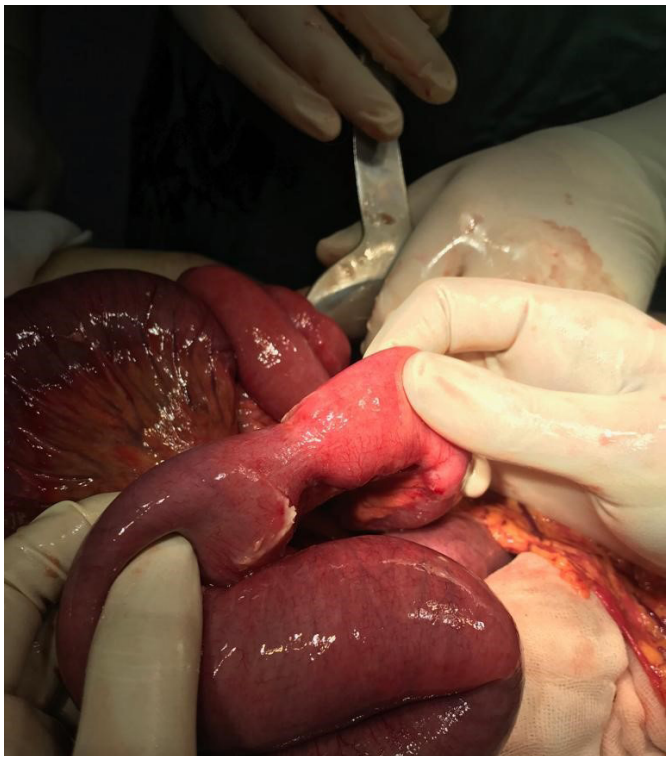

Figure 4. Obstructed area of small intestine

DISCUSSION

Acute appendicitis is the most common etiology requiring surgical intervention in cases of acute abdomen. Physical examination and a thorough anamnesis are often sufficient for diagnosis. Laboratory tests indicating leukocytosis and imaging findings consistent with acute appendicitis further support the diagnosis. In the present era, complete treatment is achievable through both laparoscopic and open surgical approaches. On the other hand, small bowel obstructions are also frequent reasons for hospital admissions, constituting 15% of cases requiring emergency surgery.[4] Postoperative adhesions account for 60% of the causes of intestinal obstructions. Investigating the etiology of acute abdomen demands careful attention, as intra-abdominal pathologies may present with unusual symptoms. Rare causes of small bowel obstructions include bezoars, B-cell lymphoma, foreign bodies, gallstones, and endometriosis.[5]

Mechanical obstruction due to acute appendicitis is a seldom-seen phenomenon. While investigating the etiology of acute abdominal conditions in a patient, the prominence of symptoms and signs of intestinal obstruction, a history of previous abdominal surgery, can mask the actual cause of acute abdomen. This situation may lead to the progression of the primary pathology with complications. Harris and colleagues, in 1966, first reported cases where acute appendicitis presented with signs of obstruction, most of which revealed perforation and secondary adhesions. However, in some cases, the cause of obstruction was the displacement of the omentum to the right iliac fossa, leading to the bending of the small intestine.[6] In our case, no perforation was observed in the appendix, and it was noted that the inflamed appendix tissue had shifted to the right iliac fossa along with a small segment of the small intestine.

CONCLUSION

The patient's history of previous abdominal surgery, the presence of obvious air-fluid levels at the time of admission, the computed tomography (CT) scan only mentioning air-fluid levels without a clear diagnosis of appendicitis, the absence of rebound tenderness and leukocytosis in the lower right quadrant guided us towards a diagnosis of postoperative adhesion-related obstruction. Although the detection rate of acute appendicitis on CT scans reaches up to 93%, this condition may be overlooked by radiologists. In conclusion, acute appendicitis can lead to mechanical obstruction, and the resultant intestinal dilation may mask both clinical and radiological findings.

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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